CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 85-30

NPDES NO. CA0005096

WASTE DISCHARGE REQUIREMENTS FOR:

PACIFIC REFINING COMPANY
HERCULES
CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereafter called the Board) finds that:

1. Pacific Refining Company (hereafter called the discharger) submitted an NPDES Permit Application dated July 15, 1983 and amended it by letters dated November 4, 1983, February 24, 1984, and January 16, 1985 for reissuance of NPDES Permit No. CA0005096.

2. The discharge of wastewater from the facilities is currently governed by Waste Discharge Requirements, Board Order No. 78-48.

3. The discharger operates a petroleum refinery with a crude-run throughput of 35,500 barrels per day. It manufactures gasoline and other hydrocarbon fuels and is classified as a cracking refinery as defined by the U.S. Environmental Protection Agency in 40 CFR 419.20. Treated process wastewater, stormwater runoff, and other wastes as described below are discharged to San Pablo Bay, a water of the United States.

4. The reports of waste discharge and recent self-monitoring reports describe the discharges as follows:

   a. Waste 001 consists of an average of 0.25 million gallons per day (mgd) of process wastes, cooling tower blowdown, boiler blowdown, sanitary sewage, and stormwater. The treated wastes are discharged through a diffuser into San Pablo Bay at a depth of 10 feet about 2000 feet offshore and generally west of Lone Tree Point.

   b. Waste 002 is stormwater runoff from refinery property which is discharged via a natural drain approximately 2500 feet south of the outfall line for Waste 001.

   c. Waste 003 is stormwater runoff from refinery property which is discharged at a point located approximately 1000 feet south of the outfall line for Waste 001.

5. The Board adopted a revised Water Quality Control Plan, San Francisco Bay Basin (Basin Plan) on July 21, 1982, and the State Water Resources Control Board approved it on October 16, 1982. The provisions of this permit are consistent with the objectives of the Basin Plan.

6. The discharger's self-monitoring reports indicate process wastewater (Waste 001) has exhibited acute toxicity. The effluent may therefore contain conservative toxicants which are being discharged to San Pablo Bay.

7. The beneficial uses of San Pablo Bay are:

   a. Water contact recreation
   b. Non-contact water recreation
   c. Navigation
   d. Open commercial and sport fishing
   e. Wildlife habitat
   f. Estuarine habitat
   g. Fish spawning and migration
   h. Industrial uses
   i. Preservation of rare and endangered species
   j. Shellfishing

8. The Basin Plan includes the following prohibition:

   "...It shall be prohibited to discharge:

   All conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin."

9. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21000) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

10. Effluent limitation and toxic effluent standards established pursuant to Sections 208(b), 301, 304, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge.

11. Effluent limitation guidelines requiring the application of best available technology economically achievable (BAT) have been promulgated by the U.S. Environmental Protection Agency for the Petroleum Refining Point Source Category 40 CFR Part 419 on October 18, 1982. Effluent limitations of this Order are based on these guidelines, the Basin Plan, State Plans and Policies, current plant performance, and best engineering judgement. The limitations are considered to be those attainable by BAT in the judgement of the Board.

12. Under 40 CFR 122.44, "Establishing Limitations, Standards, and Other Permit Conditions," NPDES permits should also include toxic pollutant limitations if the discharger uses or manufactures a toxic pollutant as an intermediate or final product or byproduct. This permit may be modified prior to the expiration date to include effluent limitations for toxic constituents determined to be present in significant amounts in the discharge through a more comprehensive monitoring program included as a part of this Order.

13. This Order contains effluent limits based on recent production rates at this facility. The Board is aware that production can vary and commits to expediting reissuance of a new permit upon receipt of an application with new production data.

14. The Board has notified the discharger and interested agencies and persons of its intent to reissue waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

15. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Federal Water Pollution Control Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. The discharge of Waste 001 containing constituents in excess of the following limits is prohibited:

Constituent	Units	30-day Average	Maximum Daily
BOD (5-day @ 20°C)	lbs/day	163	294
	kg/day	74	134
TSS	lbs/day	131	205
	kg/day	59	93
COD	lbs/day	1140	2200
	kg/day	518	1000
Oil and Grease	lbs/day	48	89
	kg/day	22	40
	mg/l	10	20
Phenolic Compounds	lbs/day	1.01	2.20
	kg/day	0.46	1.00
Ammonia as N	lbs/day	89	196
	kg/day	40	89
Sulfide	lbs/day	0.86	1.93
	kg/day	0.39	0.88
Total Chromium	lbs/day	1.19	3.43
	kg/day	0.54	1.56
Hexavalent Chromium	lbs/day	0.10	0.22
	kg/day	0.04	0.10
Total Zinc	lbs/day	2.50	5.00
	kg/day	1.13	2.27
Settleable Solids	ml/l-hr	0.1	0.2
Soluble BOD (5-day @ 20°C)	mg/l	*	*

* The Board will consider inclusion of limitations for Soluble BOD (defined as non-filterable) based on 18 months of performance data to be obtained as a part of the attached self-monitoring program.

2. In addition to the 30-day average and daily maximum pollutant weight allowances shown in A.1, allocations for pollutants attributable to stormwater runoff discharged as a part of Waste 001 are permitted in accordance with the following schedules:

STORMWATER RUNOFF

Constituent	Units	30-Day Average	Maximum Daily
BOD (5-day @ 20°C)	mg/l	26	48
TSS	mg/l	21	33
COD	mg/l	180	360
Oil and Grease	mg/l	8	15
Phenolic Compounds	mg/l	0.17	0.35
Total Chromium	mg/l	0.21	0.60
Hexavalent Chromium	mg/l	0.028	0.062

The total effluent limitation for the discharge is the sum of the stormwater runoff allocation and the mass limits contained in A.1. The total effluent limitation (both maximum and average) is to be computed by the discharger on a monthly basis as shown in Part B of the Monitoring Program.

3. Waste 001 shall not contain a chlorine residual in excess of 0.0 mg/l.

4. Waste 001 shall not have a pH less than 6.0 nor greater than 9.0.

5. In representative samples of the effluent, the discharge of Waste 001 shall meet the following limit of quality:

TOXICITY:

The survival of threespine stickleback (Gasterosteus aculeatus) test fishes in 96 hour bioassays shall achieve a 90 percentile value of not less than 50 percent survival based on any ten consecutive samples.

6. The discharge of Wastes 002 and 003 containing constituents in excess of the following limits is prohibited:

Constituent	Units	Maximum Daily
Oil and Grease	mg/l	15
TOC	mg/l	110
pH	pH units	6.5-8.5
Visible oil	observation	none
Visible color	observation	none

7. Total coliform bacteria for a median of 5 consecutive samples of Waste 001 shall not exceed 240 MPN/100 ml. Any single sample shall not exceed 10,000 MPN/100 ml when verified by a repeat sample taken within 48 hours.

B. Receiving Water Limitations

1. The discharge of wastes shall not cause the following conditions to exist in waters of the State at any place at levels that cause nuisance or adversely affect beneficial uses:

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths;

   c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

   d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

   e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

   a. Dissolved oxygen: 5.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation.

b. Dissolved sulfide: 0.1 mg/l maximum.

c. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.

d. Un-ionized ammonia (as N): 0.025 mg/l Annual Median,
0.4 mg/l Maximum at any time.

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments therto, the Board will revise and modify this Order in accordance with such more stringent standards.

C. Provisions

1. Waste 001 shall receive an initial dilution of at least 10:1.

2. In the event of repeated noncompliance with Effluent Limitation A.5 - Toxicity, the discharger may be required to submit to the Board a technical report, identifying the conservative and non-conservative toxicants in the process waste effluent and the extent to which each toxicant contributes to the total toxicity.

3. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act, or amendments thereto, and shall take effect at the end of ten days from date of hearing provided the Regional Administrator, U.S. Environmental Protection Agency, has no objections.

4. This permit shall be modified or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(c), and (d), 303, 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

(a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or,

(b) Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

5. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Board.

6. This permit may be modified prior to the expiration date to include effluent limitations for toxic constituents determined to be present in significant amounts in the discharge through a more comprehensive monitoring program included as a part of this Order.

7. All applications, reports, or information submitted to the Board shall be signed and certified pursuant to Environmental Protection Agency regulations 40CFR122.41(k).

8. Pursuant to Environmental Protection Agency regulations [40CFR122.42(a)] the discharger must notify the Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin, use or manufacture a pollutant not reported in the permit application, or (2) a discharge of a toxic pollutant not limited by this permit has occurred, or will occur, in concentrations that exceed the specified limits included in 40 CFR 122.42(a).

9. Order Nos. 78-48 and 80-45 are hereby rescinded.

10. This Order includes all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated April 1977 except A.5, A.12, B.2, and B.5.

11. This Order expires on February 20, 1990 and the discharger must file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.

12. The discharger shall comply with all Limitations and Provisions of this Order upon its adoption by the Board except as noted below.

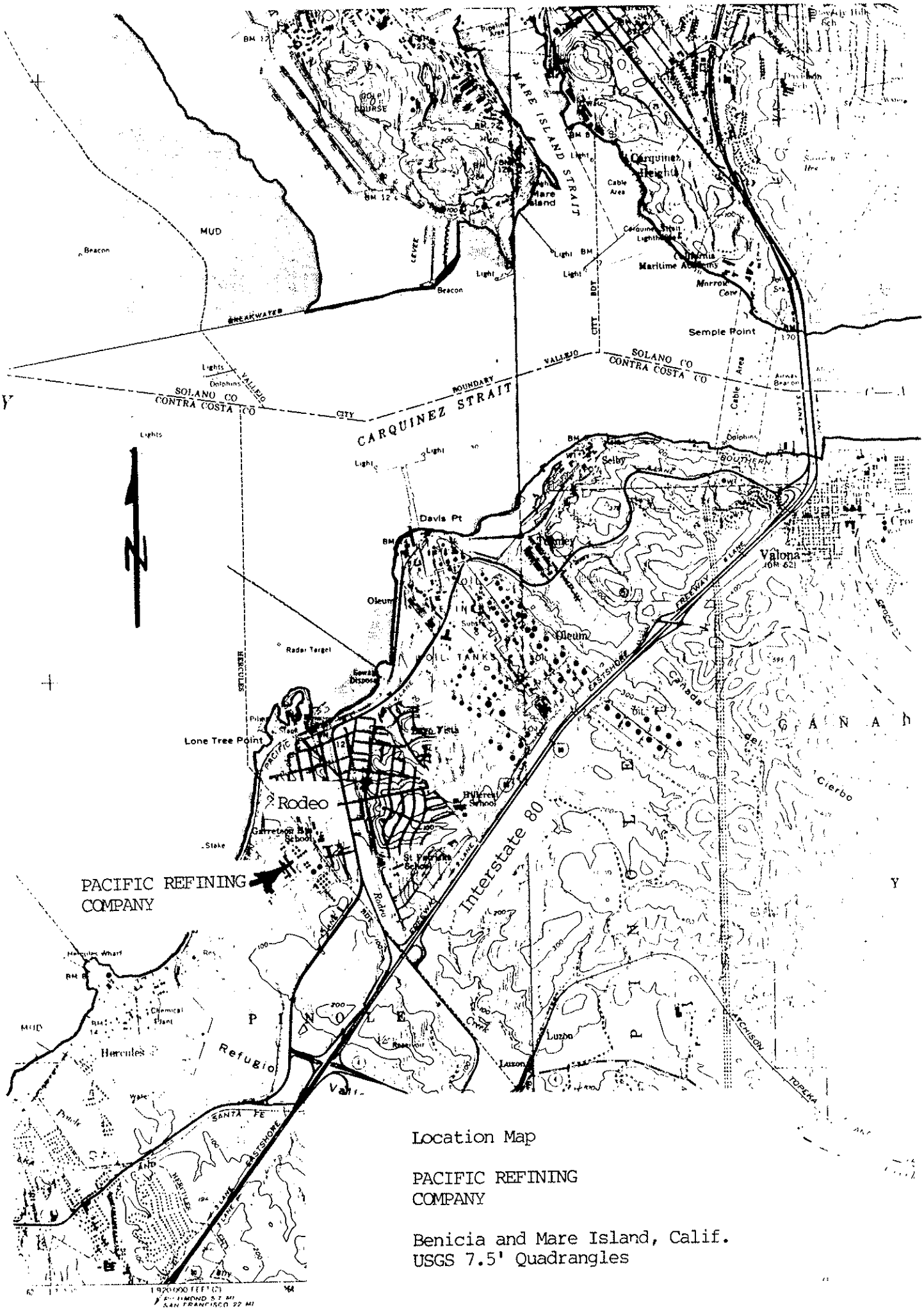
13. The discharger shall comply with Effluent Limitation A.1, Oil and Grease, 30-day average of 10 mg/l, in accordance with the following time schedule:

Task	Deadline
Determine sources of oil and grease and submit conceptual plan for compliance:	August 20, 1985
Achieve full compliance:	August 20, 1986

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on February 20, 1985.

ROGER B. JAMES
Executive Officer

Attachments:
Location Map
Standard Provisions, Reporting
Requirements and Definitions dated April 1977
Self-Monitoring Program



Location Map

PACIFIC REFINING
COMPANY

Benicia and Mare Island, Calif.
USGS 7.5' Quadrangles

Heavy duty ——— Light duty - - -

...from aerial photographs by photogrammetric methods

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

AMENDED
SELF- MONITORING PROGRAM
FOR

PACIFIC REFINING COMPANY

HERCULES

CONTRA COSTA COUNTY

NPDES NO. CA 0005096

ORDER NO. 85-30

CONSISTS OF

PART A, dated DECEMBER 1986

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. EFFLUENT

Station	Description
E-001	At any point in the outfall from the treatment facilities between the point of discharge and the point at which all waste tributary to that outfall is present.
E-001-D	At any point in the disinfection facilities for Waste E-001, at which point all sewage tributary there to is present and adequate contact with the disinfectant is assured. (May be the same as E-001).
E-002	At any point in the bypass at which all waste tributary to that outfall is present.
E-003	At any point in the bypass at which all waste tributary to that outfall is present.

B. RECEIVING WATERS

Station	Description
C-A-0	Background station, 100 feet upstream of diffuser section.
C-A-1	10 feet downstream of center port.
C-A-2	60 feet downstream of center port.
C-A-3	120 feet downstream of center port.
C-R-1	At a point in San Pablo Bay, located approximately 3000 feet northeasterly from the geometric center of the diffuser system for Outfall 001.
C-R-2	At a point in San Pablo Bay, located approximately 3000 feet westerly from the geometric center of the diffuser system for Outfall 001.

II. MISCELLANEOUS REPORTING

A. The discharger shall record the rainfall on each day of the month.

B. The discharger shall continue using its present stormwater runoff/ballast water allocation method until a more suitable method is developed by staff or discharger. The discharger has proposed an alternative method and staff has tentatively agreed with the proposed method. A final decision on the proposed method will be made after the discharger has submitted an overall Stormwater Management Plan for its facility. A description of the method presently used by the discharger shall be included in its self-monitoring reports. The daily maximum allocation must be computed for each day Waste 001 is monitored.

C. The discharger shall retain and submit (when required) the following information concerning the monitoring program for organic and metallic pollutants.

a. Description of sample stations, times, and procedures.

b. Description of sample containers, storage, and holding time prior to analysis.

c. Quality assurance procedures together with any test results for replicate samples, sample blanks, and any quality assurance tests, and the recovery percentages for the internal and surrogate standards.

D. The discharger shall submit in the monthly self-monitoring report the metallic & organic test results together with the detection limits (including unidentified peaks). All unidentified (non-Priority Pollutants) peaks detected in the EPA 624 and 625 test methods shall be identified and semi-quantified. Hydrocarbons detected at < 10 ug/l based on the nearest internal standard may be appropriately grouped and identified together as aliphatic hydrocarbons, aromatic hydrocarbons, and unsaturated hydrocarbons. All other hydrocarbons detected at >10 ug/l based on the nearest internal standard shall be identified and semi-quantified.

Note that you may submit your metallic monitoring results in your regular self-monitoring reports or in a separate report within thirty days of the end of each

month, as long as you indicate in your regular monthly monitoring report that the metals results will be reported in this separate report.

E. Ballast water treated and discharged as part of Waste 001 shall be metered and the volume recorded in the self-monitoring report for each calendar day. The 30-day average shall be the sum of the daily values in a calendar month divided by the number of days in that month. Ballast-water allocations shall be calculated by multiplying the volume of ballast water, determined above by the appropriate concentration listed under Effluent Limitation A.2. in the permit.

III. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling and analysis shall be that given in Table 1 (attached).

B. Sample collection, storage, and analysis shall be performed according to the latest 40 CFR Part 136 or othermethods approved and specified by the Executive Officer of this Regional Board.

IV. MODIFICATIONS TO PART A

None.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No.73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No.85-30.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer or Regional Board.

for
ROGER B. JAMES
EXECUTIVE OFFICER

Attachments:
Table 1

Effective Date March 18, 1987

TABLE 1

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	E-001		E-001-D	E-002 E-003	C-A-0 thru C-A-3	C-R-1 C-R-2						
TYPE OF SAMPLE	C-24	G	G	G	G	G						
Flow Rate (mgd)	cont											
BOD, 5-day, 20° C and COD (mg/l & kg/day)	W											
Chlorine Residual & Dosage (mg/l & kg/day)		W										
Settleable Matter (ml/l-hr. & cu. ft./day)		W		E								
Total Suspended Matter (mg/l & kg/day)	W											
Oil and Grease (mg/l & kg/day)		(1) W		E								
Coliform (Total or Fecal) (MPN/100 ml) per req't			W									
Fish Toxicity	(3) W											
Ammonia Nitrogen (mg/l & kg/day)	W											
Soluble BOD (mg/l)	(9) W											
Nitrite Nitrogen (mg/l & kg/day)												
Total Organic Nitrogen (mg/l & kg/day)												
Total Phosphate (mg/l & kg/day)												
Turbidity (Jackson Turbidity Units)												
pH (units)	(2) Cont			E	M	M						
Dissolved Oxygen (mg/l and % Saturation)					M	M						
Temperature (°C)	Cont				M	M						
Apparent Color (color units)												
Total Sulfides (mg/l)		W										
Sulfides (if DO<5.0 mg/l) Total & Dissolved (mg/l)					(4) M	(4) M						
Arsenic (mg/l & kg/day)	2M											
Cadmium (mg/l & kg/day)	W											
Chromium, Total (mg/l & kg/day)	W											
Copper (mg/l & kg/day)	W											
Cyanide (mg/l & kg/day)	W											
Silver (mg/l & kg/day)	W											
Lead (mg/l & kg/day)	W											
ALUMINUM (mg/l & kg/day)	M											
COBALT (mg/l & kg/day)	M											

TABLE 1 (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	E-001		E-001-D	E-002 E-003	C-A-0 thru C-A-3	C-R-1 C-R-2						
TYPE OF SAMPLE	C-24	G	G	G	G	G						
Mercury (mg/l & kg/day)	W											
Nickel (mg/l & kg/day)	W											
Vanadium (mg/l & kg/day)	W											
Zinc (mg/l & kg/day)	W											
Phenolic Compounds (mg/l & kg/day)	W											
All Applicable Standard Observations				E	M	M						
Bottom Sediment Analyses and Observations												
Total Ident. Chlor. Hydrocarbons (mg/l & kg/day)												
Total Organic Carbon (TOC) (mg/l & kg/day)				E								
Hexavalent Chromium	W											
Unionized Ammonia (as N)					M	M						
Selenium (10)	W											
Volatile Organics (5)		2Q (7)										
Acid/Base/Neutral Organics (6)		2Y (7)										
Polynuclear Aromatic Hydrocarbons (8)	M											

LEGEND FOR TABLE 1

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample - 24-hour
Cont = continuous sampling
O = observation

TYPES OF STATIONS

I = intake stations
E = waste effluent stations
C = receiving water stations
B = bottom sediment stations

FREQUENCY OF SAMPLING

E = each occurence
D = once each day
W = once each week
2/W = 2 days per week
M = once each month
2M = every 2 months
Y = once each year
2Y = twice each year
cont = continuous

FOOTNOTES FOR TABLE 1

(1) Oil and grease sampling shall consist of 3 grab samples taken at 2 hour intervals during the sampling day, with each grab being collected in a glass container. The entire volume of each sample shall be composited prior to analysis. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite wastewater sample for extraction and analysis.

(2) Daily minimum and maximum shall be reported.

(3) The discharger shall determine compliance utilizing flow-through bioassays. Immediately upon the death of over half the test fish, the LC-50 of the discharge shall be determined using at least 4 dilutions in a static bioassay.

(4) Receiving water analysis for sulfides should be run when dissolved oxygen is less than 5.0 mg/l.

(5) Volatile Organic Toxic Pollutants shall be analyzed using EPA Method 624 of the July, 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057.

(6) Acid and Base/Neutral Extractable Organic Toxic Pollutants shall be analyzed using EPA Method 625 of the July, 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057.

(7) Grab samples shall be collected coincident with samples collected for the analysis of the regulated parameters. In addition, the grab samples must be collected in glass containers.

(8) Polynuclear Aromatic Hydrocarbons shall be analyzed using EPA Method 610 of the July, 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater. Note that the samples must be collected in amber glass containers. These samples shall be collected coincident with samples collected for the analysis of the regulated parameters. An automatic sampler which incorporates glass sample containers and keeps the samples refrigerated at 4 C and protected from light during compositing may be used. Note that the 24-hour composite samples may consist of eight grab samples collected at three-hour intervals. The analytical laboratory shall remove flow-proportioned volumes from each sample vial or container for the analysis.

(9) Soluble BOD is defined here as the 5-day, 20^{o}C BOD of filtrate that passes through a standard glass fiber filter as described in Standard Methods for the Examination of Water and Wastewater, 15th Edition, Part 209 B., APHA, AWWA, WPCF, (1980).

(10) Selenium must be analyzed only by the atomic absorption, gaseous hydride procedure (EPA Method No. 270.3/ Standard Method No. 303 E).